Ieremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

AUG 1 0 2015

Mr. Brian Power Area Environmental Manager Republic Services, Inc. 13570 St. Charles Rock Road Bridgeton, MO 63044

RE: Corrective Action Assessment and Plan—Neck Area and North Quarry, Bridgeton Sanitary Landfill, Permit Number 0118912, St. Louis County

Dear Mr. Power:

The Missouri Department of Natural Resources' Solid Waste Management Program (SWMP) has reviewed:

- · reports submitted by Republic Services, Inc. pursuant to the First Agreed Order;
- information submitted on December 1, 2014, and Bridgeton Landfill's responses to questions
 from the department related to the "Expanded Heat Removal Pilot Study" for the Bridgeton
 Landfill, and
- a "Corrective Action Plan, Potential Northward Progression of Subsurface Smoldering Event" report prepared by Republic Services' consultant, Civil & Environmental Consultants (CEC) received on November 5, 2014. This plan provided Bridgeton Landfill's response to SWMP's October 7, 2014, letter requiring the facility to add nine (9) temperature monitoring probes (TMPs) in the North Quarry and complete a corrective action assessment and related plan.

Based upon our review of these Republic Services' submittals for Bridgeton Landfill, the SWMP is requiring submittal of work plans and schedules for previously agreed upon work set forth under the North Quarry Action Plan (NQAP) based upon the below data and referenced exceedance reports. These work plans shall include: 1) Additional corrective action measures to protect against potential progression of the subsurface fire from the South Quarry into the North Quarry and 2) Corrective measures to prevent independent fires from being generated in the North Quarry.

Current Status and Assessment

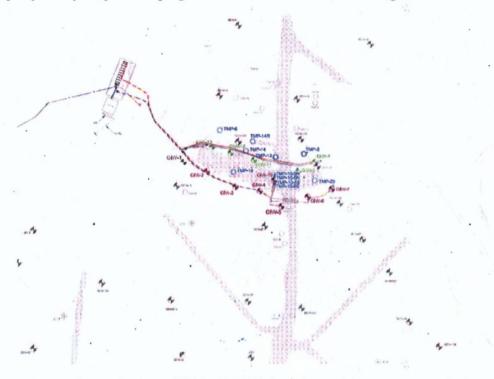
The facility's November 5, 2014, Corrective Action Plan Potential Northward Progression of Subsurface Smoldering Event document states, at the time of the submittal, the expanded heat removal pilot study was newly implemented. As of July 2015, Bridgeton Landfill expanded the Heat Extraction Pilot Study to include an additional five (5) gas interceptor wells. However, the pilot study cooling line does not

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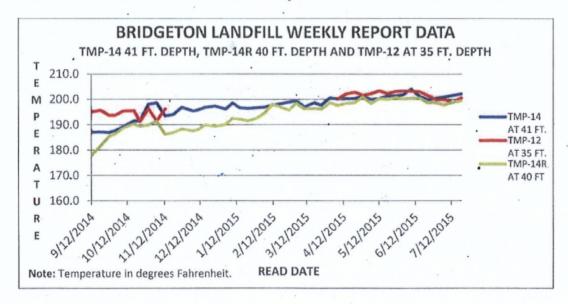
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extend across the entire Neck Area, i.e., from quarry wall to quarry wall, which continues to allow an open pathway for potential progression of the subsurface smoldering fire.



Drawing from Bridgeton Landfill May 22, 2015 submittal Expanded Heat Extraction Pilot Study (Feezor Eng., Inc.).

Data reported by Bridgeton Landfill continues to show an area of concern in the Neck which seemingly is beyond the zone of influence of the Heat Extraction Pilot Study. This area is in and around TMP-12 and TMP-14, the new TMP-14R and Gas Extraction Well-110 (GEW-110). Of specific concern are the temperatures being reported around the 41 foot depth of TMP-14, the 40 foot depth of TMP-14R and the 35 foot depth of TMP-12 which have shown a slow, steady progression upwards and are now reported at or slightly above 200° F. The following chart and table show temperatures reported from TMP-12, TMP-14 and TMP-14R since TMP-14R was installed in September 2014.



BRIDGETON LANDFILL WEEKLY REPORT DATA FROM TEMPERATURE MONITORING PROBES

	TMP-14 at 41	Foot Depth			TMP-14R at 4	10 Foot Depth	
READ DATE	READING (° F)	READ DATE	READING (° F)	READ DATE	READING (° F)	READ DATE	READING (° F)
9/12/2014	187.1	2/25/2015	198.9	9/12/2014	178.1	2/23/2015	195.
9/19/2014	187.2	3/3/2015	199.4	9/19/2014	181.7	3/4/2015	198.
9/26/2014	187.0	3/10/2015	197.1	9/26/2014	185.3	3/11/2015	196.
10/1/2014	187.7	3/18/2015	198.7	10/1/2014	186.3	3/18/2015	196.
10/8/2014	189.2	3/24/2015	197.7	10/8/2014	188.7	3/24/2015	196.
10/17/2014	191.5	3/31/2015	200.6	10/17/2014	190.3	3/31/2015	198.
10/22/2014	191.5	4/7/2015	200.2	10/22/2014	189.3	4/7/2015	197.
10/29/2014	198.1	4/14/2015	200.3	10/29/2014	189.9	4/14/2015	198.
11/5/2014	198.7	4/21/2015	200.4	11/5/2014	191.5	4/21/2015	198.
11/12/2014	193.5	4/28/2015	201.2	11/12/2014	186.3	4/28/2015	201.
11/19/2014	194.1	5/5/2015	200.0	11/19/2014	186.9	5/5/2015	· 198.
11/26/2014	196.9	5/12/2015	200.3	11/26/2014	188.3	5/12/2015	200.
12/6/2014	195.4	5/19/15	201.4	12/6/2014	187.6	5/19/15	200.
12/10/2014	195.9	5/26/15	201.5	12/10/2014	188.1	5/26/15	200.
12/16/2014	196.9	6/1/15	201.8	12/15/2014	190.0	6/1/15	200.
12/24/2014	197.4	6/8/15	204.1	12/24/2014	189.4	6/8/15	200.
1/2/2015	196.2	6/15/15	201.3	1/2/2015	190.1	6/15/15	200.
1/8/2015	198.6	6/22/15	199.9	1/8/2015	192.6	6/22/15	198.
1/14/2015	196.7	6/29/15	200.5	1/14/2015	192.2	6/29/15	198.
1/21/2015	196.5	7/6/15	201.0	1/21/2015	191.6	7/6/15	197.
1/28/2015	196.7	7/13/15	201.6	1/28/2015	192.5	7/13/15	199.
2/4/2015	197.0	7/20/15	202.2	2/2/2015	194.5	7/20/15	199.
2/11/2015	197.7			. 2/16/2015	198.1		

Note: TMP-14R first reported as part of the Heat Extraction Pilot Study on 9/12/2014.

Pre-pilot study, weekly data is available for TMP-14 and additional days between 9/12/2014 and 2/26/2015 are available for TMP-14R.

Additionally, on April 7, 2015, Bridgeton Landfill began reporting TMP-12 at the 35 foot depth. (Note: This thermocouple had previously been reported as having high or no resistivity.)

BRIDGETON LANDFILL WEEKLY REPORT DATA FROM TEMPERATURE MONITORING PROBES TMP-12 at 35 Foot Depth

READING READING READ DATE **READ DATE** (° F) (°.F) 4/7/2015 6/1/15 200.2 203.4 4/14/2015 202.2 6/8/15 203.2 4/21/2015 202,8 6/15/15 203.1 4/28/2015 6/22/15 201.5 201.6 5/5/2015 202.3 6/29/15 199,9 READING READING **READ DATE READ DATE**

(° F)

5/12/2015	203.4	7/6/15	200.0	
5/19/15	202.3	7/13/15	198.8	
5/26/15	203:2	7/20/15	200.6	

On December 29, 2014, GEW-110 had its highest to date temperature reported as 157.5° F with 0.0% by volume oxygen present in the well. January 5, 2015, GEW-110 was reported as being in need of repair with a temperature of 32.5° F with 10.8% by volume oxygen. After flow was restored, GEW-110's temperature was reported with a new maximum temperature of 175.7° F with 0.0% by volume oxygen on February 14, 2015, and was reported as 166.0° F with 4.0% by volume oxygen on May 15, 2015. The upward trend in temperature in this gas extraction well is apparent when the well is fully operational.

Bridgeton Landfill Weekly Report
 Data from Neck Area GEW-110

GEW ID#	Reading Date	CH4 (% Vol.)	CO2 (% Vol.)	Oxygen (% Vol.)	Balance (% Vol.)	Wellhead Temp. (°F)	Initial Static Pressure (In W.C.)
GEW-110	10/17/14	1.4	19.6	14.7	64.3	66.0	-21.6
GEW-110	10/17/14	1.4	19.6	. 14.7	64.3	66.0	-21.6
GEW-110	10/20/14	0.8	17.0	14.0	68.2	67.0	-21.6
GEW-110	10/20/14	0.9	18.3	14.6	66.2	67.0	-21.7
GEW-110	10/27/14	0.4	21.3	14.2	64.1	88.0	-22.9
GEW-110	11/07/14	1.2	13.1 .	17.9	67.8	61.0	-21.1
GEW-110	11/07/14	0.8	7.7	19.9	71.6	62.0	-21.1
GEW-110	11/17/14	0.5	11.5	19.2	68.8	28.0	-21.1
GEW-110	11/24/14	3.8	32.4	.8.0	55.8	42.5	-22.89
GEW-110	11/24/14	2.8	37.6	7.0	52.6	43.1	-22.77
GEW-110	12/04/14	. 3.1	38.3	10.2	48.4	45.2	-18.25
GEW-110	12/04/14	1.8	34.8	10.3	53.1	42.8	-18.13
GEW-110	12/08/14	2.1	31.8	10.5	55.6	65.4	-19.84
GEW-110	12/08/14	1.8	29:4	11.1	57.7	66.2	-19.9
GEW-110	12/15/14	3.6	-57.6	0.0	38.8	75.7 •	-0.29
GEW-110	12/22/14	2.0	69.0	0.6	28.4	109.0	-19.1
GEW-110	12/29/14	3.5	56.3	0.0	40.2	157.5	-23.02
GEW-110	12/29/14	2.7	57.0	0.1	40.2	157.0	-23.02
GEW-110	01/05/15	2.5	28.1	11.0	58.4	32.1	-23.93
GEW-110	01/05/15	1.7	27.2	10.8	60.3	32.5	-23.99
GEW-110	01/13/15	6.0	37.8	- 10.2	46.0	32.5	-24.88
GEW-110	01/13/15	3.2	33.2	. 10.4	53.2	34.4	-24.45
GEW-110	01/26/15	2.2	20.0	14.2	63.6	60.2	-23.81
GEW-110	01/26/15	2.2	20.1	13.6	64.1	63.5	-23.44
GEW-110	02/02/15	4.8	29.7	12.4	53.1	46.9	-13.84
GEW-110	02/14/15	13.7	53.5	0.0	32.8	175.7	-23.44
GEW-110	02/14/15	13.4	54.9	0.0	31.7	172.7	-12.76
GEW-110	02/20/15	16.1	48.4	1.3	34.2	172.7	-12.21
GEW-110	• 02/20/15	15.8	48.7	1.3	34.2	172.2	-12.09
GEW ID#	Reading Date	'CH4 (% Vol.)	CO2 (% Vol.)	Oxygen (% Vol.)	Balance (% Vol.)	Wellhead Temp. (°F)	Initial Static Pressure (In W.C.)

GEW-110	02/26/15	23.2	51.0	0.1	25.7	156.6	-22.44	
GEW-110	02/26/15	22.5	51.8	0.2	25.5	156.0	-20.98	
GEW-110	03/02/15	26.5	49.9	0.0	23.6	168.3	-19.05	
GEW-110	03/02/15	25.9	51.1	0.0	23.0	169.0	-23.87	
GEW-110	03/09/15	2.1	54.8	1.4.	41.7	126.3 ·	-14.16	
GEW-110	03/09/15	0.7	55.6	2.2	41.5	. 129.6	-17.03	
GEW-110	03/16/15	1.2	15.7	13.9	69.2	92.4	-18.68	
GEW-110	03/16/15	1.2	16.1	13.6	69.1	93.2	-18.62	
GEW-110	03/23/15	1.5	15.9	16.9	65.7	70.9	-23.5	
GEW-110	03/23/15	1.3	14.7	16.6	67.4	71.2	-23.08	
GEW-110	04/01/15	8.3	54.5	. 0.8	36.4	146.0	-24.42	
GEW-110	04/01/15	7.1	56.8	0.9	35.2	146.6	-23.99	
GEW-110	04/10/15	16.7	44.8	1.8	36.7	166.9	-22.41	
GEW-110	04/10/15	17.1	42.1	2.0	38.8 .	167.3	-22.47	
GEW-110	04/16/15	24.3	54.3	0.4	21.0	160.0	-24.1	
GEW-110	04/16/15	24.2	54.5	0.4.	20.9	160.0	-24.0	
GEW-110	04/22/15	7.6	33.6	4.6	54.2	168.3	-19.45	
GEW-110	04/22/15	9.4	35.4	4.6	50.6	168.3	-19.51	
GEW-110	04/28/15	5.8	30.6	8.1	55.5	168.3	-15.08	
GEW-110	04/28/15	5.9	30.2	7.9	56.0	168.3	-15.57	
GEW-110	05/07/15	11.7	34.9	4.3	49.1	169.7	-16.59	
GEW-110	05/07/15	12.1	32.0	4.5	51.4	169.3	-17.13	
GEW-110	05/15/15	12.7	36.3	4.0	47.0	166.0	-14.1	
GEW-110	05/20/15	19.4	36.5	4.0	40.1	165.0	-15.6	
GEW-110	05/28/15	12.4	35.1	3.6.	48.9	170.0	-19.7	
GEW-110	06/01/15	12.2	40.6	3.9	43.3	166.6	-21.8	
GEW-110	06/01/15	12.3	40.5	4.0	43.2	166.6	-21.8	
GEW-110	06/08/15	2.4	. 24.4	9.6	63.6	148.0	-26.1	
GEW-110	06/15/15	15.8	48.3	1.2	34.7	163.5	-21.7	
GEW-110	06/23/15	17.2	51.3	1.1	30.4	170.0	-21.9	
GEW-110	07/02/15	7.9	26.3	. 12.1	53.7	129.3	-11.0	
GEW-110	07/02/15	7.9	25.8	12.2	54.1	131.6	-3.5	
GEW-110	07/09/15	Well not abl	Well not able to be read due to excessive moisture.					
GEW-110	07/16/15	Well not able to be read due to excessive moisture.						

From CEC's report, your consultant appears to believe these slow increases are due to conduction and convection of heat that was left in the area after the subsurface smoldering event was active in the vicinity. Then, the report further states CEC and Bridgeton believe the optimum condition in the Neck Area would be to observe declining temperature profiles. The SWMP agrees the optimum condition is consistently declining temperatures through the subsurface smoldering event impacted areas of the landfill, especially in the Neck Area. The Bridgeton Landfill's Neck Area must be closely monitored and maintenance promptly conducted.

Development of Additional Corrective Measures and Preparedness for Implementation

Supplementary Engineering Controls in the Neck:

Given the uncertainties regarding installation of an isolation barrier near the West Lake Landfill Area 1 and the information presented above, the SWMP is requiring submittal of work plans and schedules for supplementary corrective measures. These plans must be submitted for review and approval by SWMP to ensure Bridgeton Landfill has immediately, implementable measures at hand. With installation of the expanded heat extraction pilot study which has yet to be proven, Bridgeton Landfill has no additional measures approved and immediately, implementable.

• Within 30 days of this letter, Republic Services shall submit a work plan and schedule identifying a technology or technologies that may be used to halt any potential movement of the South Quarry smoldering fire identified to be occurring in the neck north of the gas interceptor wells. The schedule must identify specifically the time needed for mobilization through project completion, whether required by SWMP or initiated by Bridgeton Landfill.

Industrial waste materials were accepted by Bridgeton Landfill prior to enactment of 40 CFR Part 258, Subtitle D of the Resource Conservation and Recovery Act. The exact types and volumes of industrial waste material accepted are not known. These materials were accepted during the period the North Quarry was being filled and are likely present in the North Quarry. A 1992-1994 fire at the North Quarry's east wall reached temperatures of 800° F to 1,000° F according to a report filed by SCS Engineers for Laidlaw Waste Systems, the "then" landfill owner. At a minimum, Republic Services must have a corrective measure using inert gas injection or other available technology for "hot spot" treatment in the North Quarry to contain any independent fire(s) that might be generated.

Within 30 days of this letter, Bridgeton Landfill shall submit a corrective measures work plan
and schedule with a control line specified within the corrective action zone identified in the
SWMP's October 7, 2014, letter and, at a minimum, a corrective action measure using inert gas
injection as a "hot spot" treatment.

Connection of Previously Installed North Quarry Gas Wells:

During the original North Quarry Contingency Plan development process, Republic Services' engineers stated Bridgeton Landfill would be better positioned to minimize movement of the South Quarry smoldering event into the North Quarry, should movement occur, if the landfill had additional GEWs to assist in managing reaction constituents, i.e., heat, pressure and gases, in those areas. While many new North Quarry GEWs were drilled, the GEWs were not connected to the gas collection and control system (GCCS). To be in a better position to delay or stop any forward progression of the South Quarry smoldering fire, the new North Quarry GEWs to the south of the sentry line of TMPs (TMP-16, -17, -21, -22, -23, -25, -27, -28 and -29) must be connected to the GCCS.

 The SWMP is requiring Republic Services to complete connection of the previously drilled North Quarry GEWs located to the south of the sentry line of North Quarry TMPs to the GCCS.

Enhancement of North Quarry Cap:

Reinforced concrete pipes (RCPs) in the South Quarry allowed intrusion of oxygen and emission of landfill gases to ambient air thereby creating substantial odors and a public nuisance. RCPs in the North Quarry may be contributing to localized oxygen intrusion as these North Quarry RCPs have not been

properly abandoned. Republic Services must prepare a work plan and schedule for abandonment of the RCPs in the North Quarry.

In October and November 2014, Bridgeton Landfill's applied vacuum was reported as having been increased to gas extraction wells in the North Quarry leading to a rise in some well temperatures from an increase in oxygen. Recent surface emission monitoring reports, including the June 9, 2015, report, identify areas of the North Quarry cap where methane emissions exceeded 500 parts per millions (ppm), i.e. 700-1,500 ppm in seven (7) areas of the North Quarry. Department staff observed leachate outbreaks along the north slope of the North Quarry in three (3) areas in June 2015. Movement of the smoldering fire has historically been preceded by a steam front which saturates the waste mass. Further, visual observations show the beginning of movement of waste materials from the "high" North Quarry towards the now "lower" Neck Area.



Photo taken from South Quarry looking across Neck Area to North Quarry (grassy area).

The cap must be enhanced to minimize oxygen intrusion into the underlying waste mass that may allow for increased risk of a new fire, capture of landfill gases that would otherwise be released as fugitive emissions including odors, prevention of leachate outbreaks that could contaminate ground and surface waters and monitoring for uneven settlement in the waste mass requiring fill.

- Oxygen levels are to be maintained in the North Quarry GEWs at no greater than 1.5% by volume to further reduce the likelihood of oxygen intrusion and creation of an independent fire.
 - O If corrective measures fail to lower the oxygen to the required 1.5% level, Republic Services must submit a written demonstration to the SWMP no later than 14 days from initial discovery explaining why a given well or wells did not meet the 1.5% level and include the steps taken to return the well to the required level.
- To allow for adequate management of the North Quarry, Bridgeton Landfill will need to place survey
 pins in the North Quarry and along the North Quarry's slopes to assist the SWMP and Bridgeton
 Landfill in monitoring for any rapid waste reduction that could indicate the presence and/or
 movement of a subsurface smoldering fire in the North Quarry or the need for additional fill material
 for stabilization.

- Republic Services must submit a work plan and schedule for completion of a cap enhancement project including the abandonment of North Quarry RCPs and connection of the GEWs listed above in the Connection of Previously Installed North Quarry Gas Controls.
- These enhancements to the North Quarry must be complete no later than December 1, 2015.

Integrity of Gas Collection and Control System Operation:

Recent, Monthly Reports show the level of methane at the flare inlet and available for combustion of landfill gasses continues to decrease. In the May Monthly report, methane is reported at only 5.4%, this is the lowest methane level that has been reported since reporting began to the SWMP in August 2012. The remaining components of the landfill gas were reported in the May report as nitrogen 50%, oxygen 13%, hydrogen 7.6%, carbon dioxide 24% and carbon monoxide 0.08%.

 With the reduction in available methane and hydrogen for combusting landfill gases, Republic Services will need to ensure Bridgeton Landfill complies with the requirements of the Clean Air Act, Missouri Clean Air Law and Missouri Solid Waste Management Law and implementing regulations with regards to utilization of natural gas as a supplemental fuel.

If you have any questions or comments, please feel free to contact me or Brenda Ardrey at (573) 751-5401 or at P.O. Box 176, Jefferson City, MO 65102-0176.

Sincerely,

SOLID WASTE MANAGEMENT PROGRAM

Chris Nagel Director

CN/bam

Enclosures

c: Jim Getting, P.E., Bridgeton Landfill, LLC
Ms. Laura Yates, St. Louis County Department of Health
Mr. Tom Phillips, Attorney General's Office
Mr. Larry Lehman, Compliance/Enforcement Section SWMP
Charlene Fitch, P.E., Engineering Section, SWMP
Ms. Brenda Ardrey, Operations Section, SWMP
Mr. Joe Trunko, St. Louis Regional Office





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 7

11201 Renner Boulevard Lenexa, Kansas 66219

OFFICE OF THE REGIONAL ADMINISTRATOR

JUN 02 2015

Faisal Khan, MBBS, MHP Director St. Louis County Health 6121 North Hanley Road Berkeley, Missouri 63134

Dear Dr. Khan:

Thank you for your letter dated April 30th, 2015, as well as the opportunity to meet in person on May 21, 2015, regarding the West Lake Landfill Superfund Site. The EPA greatly appreciates the County's continued interest and involvement in the Site.

We understand the County's role in regulating activities related to the Bridgeton Landfill, I and the rest of the West Lake team, will make certain that your staff are apprised, as appropriate, of developments at the Site as we continue to re-evaluate the 2008 remedy. We strive to make correspondence and finalized reports publicly available on our website, http://www.epa.gov/region07/cleanup/west_lake_landfill/, we will continue to do so to keep all stakeholders informed of Site-related activities. EPA will make every effort to provide copies of key documents to your office as appropriate.

If you have any questions or would like to discuss further, please do not hesitate to contact me at (913) 551-7006.

Sincerely,

Mark Hague

Acting Regional Administrator

Bridgeton Landfill, LLC

January 5, 2015

Chris Nagel
Solid Waste Management Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

Re: Response to MDNR's December 26, 2014, Letter Permit No. 0118912, St. Louis County

Dear Mr. Nagel:

This letter responds to your December 26, 2014, letter regarding the November and December gas wellfield data. That letter summarized the Department's review of certain data submissions, communicated the Department's concerns about the conditions of certain wells, and directed several additional actions by Bridgeton Landfill. The letter and the Department's concerns do not reflect conversations that we had with MDNR personnel prior to December 26, 2014 regarding ongoing monitoring and wellfield management efforts.

It is important to note that the well conditions within the area characterized as MDNR's "area of concern" are:

- Consistent with prior monitoring results for those wells;
- In compliance with NSPS requirements; and
- Well below any trigger level established for further action by MDNR's own experts and by the technical evaluations and planning documents that have been prepared for and approved by MDNR over the past two years.

As such, Bridgeton Landfill is uncertain of the basis for MDNR's concern and does not agree that the actions proposed by MDNR's letter are appropriate for the North Quarry or would provide any additional beneficial data. Because the data is consistent with prior monitoring results, there is no reason to believe there is any need for urgent response. Instead we think that it would be more beneficial for us to meet and discuss the current and historic data in detail in order to develop a plan that is appropriate and useful.

North Quarry Well Data

First, we want to provide additional information on the wells of concern to the Department, the wellfield management steps taken to respond to the change in gas conditions, and our assessment

Mr. Chris Nagel January 5, 2015 Page 2

that the observed conditions are commonly encountered at landfills with aged waste such as exists in the northern portion of the North Quarry.

During the November 11, 2014, North Quarry wellfield tuning and lab sampling event, nine gas extraction wells exhibited lower methane and higher balance gas than usual; however all parameters remained within NSPS required levels. In addition, gas wellhead temperatures were consistent with historical levels and did not exceed the 145° F threshold for additional monitoring as required by Second Amendment to the Agreed Order. It is worth noting that the subject gas wells have a long history of similar monitoring results without contemporaneous or subsequent evidence of reaction or subsurface oxidation event (SSO). Based on the November 11, 2014 field data, the field technical team reduced the vacuum applied to the wells where appropriate; this is standard operating procedure per Volume 2, Appendix B of the Operation, Maintenance, and Monitoring Plan which was submitted in September 2013.

Laboratory results from North Quarry wells were reviewed on December 8, 2014, and it was observed that seven of these nine gas wells contained no carbon monoxide. While two had detectable carbon monoxide levels, the detections were far below values which were described (in the Thalhamer and Stark July 22, 2013 Memorandum) as "No additional actions required, continue monitoring per the First Agreed Order." Despite there being no signs of an SSO or reaction nor any trigger for further monitoring or notification under the existing procedures and orders, the site team temporarily turned off the two gas wells which had carbon monoxide detections as well as three nearby gas wells, as a conservative measure. At all times, Bridgeton Landfill followed the proper monitoring and reporting protocol as prescribed by the Agreed Order, as amended, and utilized procedures consistent with best management practices for landfill gas extraction systems.

The properly applied protocols for wellfield management were successful at returning the wells to usual operating conditions. Carbon monoxide sampling is scheduled for all North Quarry wells in January 2015, along with the routine temperature and gas quality monitoring, which will allow further evaluation of this issue.

Response to Department's Directives

The Department's letter, sent at 4 pm the Friday after a holiday and within a holiday season, demands that substantial action be taken within a period of less than 4 business days. These demands are outside the scope of any requirements of the current Agreed Order, as amended, not necessary or reasonable to monitor the subsurface smoldering event, and wholly inconsistent with recent discussions regarding the conditions of the North Quarry wells. The timeline set forth in the Department's letter does not allow for any discussion or response, even within the timelines set forth by the Agreed Order, and in fact makes demands that are impossible to meet.

The letter also takes contrary positions to those expressed by the agency in recent calls and in our ongoing discussion of the data. To avoid confusion, ensure we are all on the same page, and develop the best approach for data evaluation, reporting and next steps, we would like to have a

Mr. Chris Nagel January 5, 2015 Page 3

meeting with the Department and its respective experts. To the extent the Department's letter constitutes a directive under the Agreed Order, this letter provides written notification that Bridgeton Landfill invokes the Dispute Resolution process of Paragraph 47 of the First Agreed Order. Please advise us of when the Department can be available for a discussion of the scope, reasonableness and necessity of the requests of the Department's December 26th letter.

- Bridgeton Landfill disputes that the two additional TMPs directed by the letter are necessary or reasonable to monitor the subsurface smoldering event and therefore disputes that the TMPs are required under Paragraph 20 of the Agreed Order.
- Bridgeton Landfill disputes that the expanded settlement monitoring is necessary or reasonable to monitor the subsurface smoldering event and therefore disputes that the expanded settlement monitoring is required under Paragraph 20 of the Agreed Order.
- Bridgeton Landfill disputes that the weekly down-hole temperature readings directed by the letter are necessary or reasonable to monitor the subsurface smoldering event and therefore disputes that the additional temperatures readings required under Paragraph 20 of the Agreed Order.
- Bridgeton Landfill objects to the request for monthly CO data to the extent it is inconsistent with the clear CO sampling requirements of the Second Amendment to the Agreed Order. As MDNR is aware, gas sampling for December, to be included in the January 20th report, was conducted prior to MDNR's letter and included only neck area wells. During January the CO sampling will include all North Quarry, South Quarry and neck wells identified in Table 1 of the Second Amendment to the Agreed Order and that data will be submitted with the monthly report on February 20, 2015. Bridgeton Landfill will continue to comply with the gas sampling requirements of the Second Amendment to the Agreed Order.

Bridgeton Landfill believes that the advanced age of waste and resulting low methane generation in the northern part of the North Quarry may require specific gas well management techniques. We anticipate that your field visit, scheduled for January 8, 2015, will aid your understanding of the landfill conditions and allow additional discussion related to the management, monitoring, and reporting for the North Quarry GCCS. We look forward to meeting with you and your team at that time.

Please contact me at (314) 744-8165 if you have any questions or comments.

Sincerely,

Brian J. Power

Environmental Manager Bridgeton Landfill, LLC

Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

DEC 26 2014

Mr. Brian Power Environmental Manager Republic Services, Inc. Bridgeton Landfill, LLC 13570 St. Charles Rock Road Bridgeton, MO 63044

RE: November and December Gas Wellfield Data, Bridgeton Sanitary Landfill,

Permit Number 0118912, St. Louis County

Dear Mr. Power:

This letter is in follow-up to Republic Services' submission on December 21, 2014, of Bridgeton Landfill's November Monthly Report as required by the First Agreed Order. The Solid Waste Management Program's (SWMP's) initial review of the reports and associated data identified an area of unexplained change, i.e., landfill gases and wellhead temperatures fluctuating outside trends previously reported and low levels of carbon monoxide in some wells, in the North Quarry. (See attached map for North Quarry review area.) Following a discussion with SWMP staff on December 23, 2014, Bridgeton Landfill submitted a data file to the SWMP containing gas extraction well data through December 23 for wells located in the North Quarry.

In conducting our data evaluation, we examined trend information inclusive of the facility's data submissions from July to mid-December 2014. The SWMP has concerns related to the period mid-October through mid-December 2014 as explanations for the fluctuations observed in wellfield and other data were not disclosed in data files or associated reports. We understand from our discussion with Bridgeton Landfill staff that gas extraction wellheads within the North Quarry were replaced with new Landtec wellheads intended to provide improved wellfield management in the North Quarry. From limited monitoring data currently available following installation of the wellheads, whether this operational modification has addressed the conditions of concern in this critical area of the North Quarry is both unclear, and unproven.

The area of concern is located in the northwest area of the North Quarry where leachate outbreaks were previously seen and also, along the northern slope of the North Quarry in close proximity to previously identified radiologically impacted material detections and the West Lake Landfill Operable Unit 1, Area 1. To be protective of public safety and the environment in this highly populated area of St. Louis County, the SWMP is requiring Bridgeton Landfill to immediately proceed with installation of two (2) additional temperature monitoring probes (TMPs). These TMPs will provide actual temperature readings from within the waste mass and will assist the permitted facility and SWMP in monitoring for changes that might warrant immediate corrective action be taken by Bridgeton Landfill. One TMP is to be located between

Mr. Brian Power Page Two

GEW-3 and GEW-4 and the other TMP between GEW-2 and GEW-46. Actual physical TMP locations will be agreed upon by Bridgeton Landfill and the SWMP no later than January 5, 2015. (See attached map for general location of TMPs.). These new TMPs must be installed by February 1, 2015. Additionally, to monitor for any change in the contours of the northern slope, Bridgeton Landfill is required to install, at no less than 50 foot intervals, slope monitoring stakes along the northern slope of the North Quarry.

Further, until otherwise determined by the SWMP, beginning with the January 2, 2015, Weekly Report or the January 20, 2015, Monthly Report as detailed below, Bridgeton Landfill is required to submit the following data to supplement monitoring in this critical area:

- Weekly down-hole temperature readings from North Quarry gas extraction wells: GEW-2, -3, -4, -5, -42R, -45R, -46R, -47R, -48, and -49. Weekly reports must be received each Friday by 4:00 p.m.
- Monthly carbon monoxide data from the following North Quarry gas extraction wells: GEW-2, -3, -4, -5, -8, -42R, -45R, -46R, -47R, -48, -49, -53 and -55.

If you have any questions or comments regarding this letter, please contact me or Brenda Ardrey of my staff at (573) 526-3900 or P.O. Box 176, Jefferson City, MO 65102-0176.

Sincerely,

SOLID WASTE MANAGEMENT PROGRAM

Chris Nagel Director

Chris Rogel

CN:bam

c: Mr. Tom Phillips, Attorney General's Office

Ms. Jessie Merrigan, Lathrop and Gage

Ms. Leanne Tippett Mosby, Director, Division of Environmental Quality

Ms. Charlene Fitch, Chief, Engineering Section, SWMP

Mr. Larry Lehman, Chief, Compliance/Enforcement Section, SWMP

Ms. Brenda Ardrey, Chief, Operations Section, SWMP

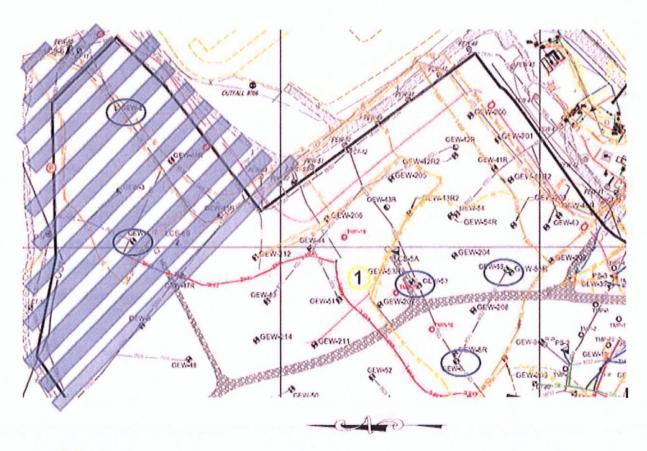
Mr. Mark Milward, St. Louis County Department of Health

Ms. Laura Yates, St. Louis County Department of Health

St. Louis Regional Office via Electronic Shared File

Bridgeton Sanitary Landfill North Quarry Area of Concern

Source of drawing: Submitted by Feezor Engineer, Inc. for Bridgeton Landfill - Q3 Site Infrastructure



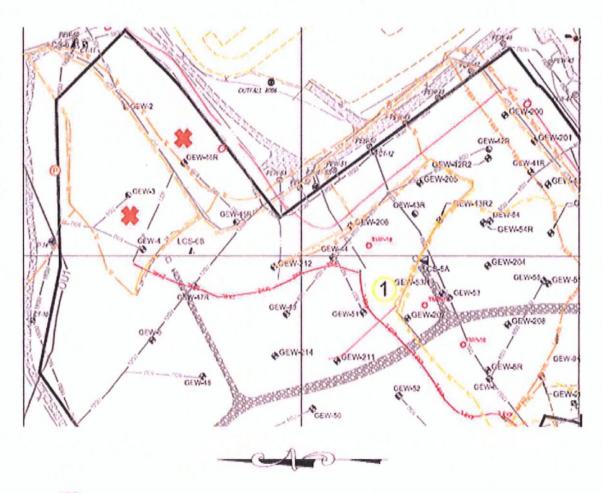


North Quarry gas extraction well with CO reported (34 ppm to 280 ppm)

= Blue lined area == North Quarry Area of Concern

Bridgeton Sanitary Landfill

Locations of Two (2) Additional Temperature Monitoring Probes in Bridgeton Landfill's North Quarry Source of drawing: Submitted by Feezor Engineer, Inc. for Bridgeton Landfill – Q3 Site Infrastructure



= location for additional North Quarry temperature monitoring probe.